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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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In the matter of)
)
Petitions to Postpone Initial Filing)
Window for Two-Way Multipoint)
Distribution Service and Instructional)
Television Fixed Service)

DA 00-1256

**COMMENTS OF
CELPLAN WIRELESS GLOBAL TECHNOLOGIES, INC.**

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Executive Summary

In their zeal to secure a postponement in the filing window, ITFS 2020, LLC ("2020") and the Association of Federal Communications Consulting Engineers ("AFCCE") have made misleading statements regarding innovative software tools developed by CelPlan for use in the design of two-way MDS/ITFS-based wireless broadband systems. Contrary to the assertions by 2020 and AFCCE, the software exists to permit the preparation of applications to be submitted during the July 3-10 window and there is ample time for such preparation. Indeed, CelPlan's consulting engineers and many others are preparing hundreds of applications for filing in the July 3-10 window. Thus, a postponement of the window will delay the introduction of MDS/ITFS-based broadband services to the public.

First and foremost, CelFCC™ performs interference analyses that fully comply with the interference protection rules adopted in MM Docket No. 97-217 and the most recent version of the Methodology. The unsubstantiated assertion that flaws in CelFCC™ will prevent the filing of applications in the first window is not borne out by the facts. CelPlan has devoted tens of thousands of man-hours (and far more computer time) to assure that CelFCC™ performs in accordance with applicable requirements. Alpha and beta versions were extensively tested, and today there are sixteen companies (representing approximately 150 licenses), including Sprint and Worldcom employing CelFCC™. Since the last major software upgrade, CelPlan has not received a single comment from one of its users suggesting that CelFCC™ is generating inaccurate analyses.

CelFCC™ is fully capable of performing analyses that take into account the "limited exception" to the 45 dB cochannel and 0 dB adjacent channel desired-to-undesired signal ratio interference protection requirements consistent with the Methodology and the Two-Way Reconsideration Order. In addition, while software upgrades are being developed to more fully automate the process, CelFCC™ can today be utilized to analyze the potential impact of proposals for upstream facilities on existing downstream ITFS stations.

Although concerns have been expressed that interference analyses results generated by CelFCC™ and EDX do not always agree, no specific examples have been provided for analysis. Thus, it is impossible to determine whether either or both software packages were properly used. Moreover, because different software implementations of the Methodology will inevitably take different approaches to issues such as unit conversions, precision, bounding, the truncation of decimals, the use of polygons in approximating curved figures and sampling rates, it is inevitable that results from CelFCC™ and EDX will vary in insignificant ways, yet still comply with good engineering practices.

Similarly, complaints that there is insufficient time to become familiar with CelFCC™ between now and the filing window ring hollow. CelPlan recommends an

initial training of 2-3 days followed by a 2 day “refresher” course 2-3 weeks later, as opposed to the 30 days suggested by 2020. Moreover, the upgrades released by CelPlan have not been of a nature that would require significant retraining. Thus, a diligent engineer trained on CelFCC™ when the software was released in April gained CelFCC™ proficiency long ago.

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**COMMENTS OF
CELPLAN WIRELESS GLOBAL TECHNOLOGIES, INC.**

CelPlan Wireless Global Technologies, Inc. ("CelPlan") hereby submits its comments in response to the Public Notice issued by the Federal Communications Commission on June 12, 2000 soliciting public comment on requests by ITFS 2020, LLC ("2020") and the Association of Federal Communications Consulting Engineers ("AFCCE") for a postponement of as much as nine months in the initial window for the submission of two-way Multipoint Distribution Service ("MDS") and Instructional Television Fixed Service ("ITFS") applications. CelPlan is submitting these comments to set the record straight regarding the innovative software tools that CelPlan has developed for use in the design of two-way MDS/ITFS-based wireless broadband systems. Unfortunately, the proponents of delay have made misleading statements to the Commission regarding CelPlan's software.

I. INTRODUCTION

Since it was founded in 1992, CelPlan's mission has been to provide the highest-quality engineering solutions for the wireless industry. Its expertise extends from the conception and development of wireless infrastructure to planning, deploying and

optimizing wireless systems. Historically, CelPlan's clients have been industry leaders in the Cellular Communications Service, Personal Communications Service, Local Multipoint Distribution Service, Specialized Mobile Radio Service and paging services. In the interest of brevity, the Commission is referred to CelPlan's web site at www.celplan.com for a complete description of the services CelPlan offers the wireless industry.

In response to the Commission's decision in the Report and Order in MM Docket No. 97-217 (the "Two-Way Order") to permit the deployment of two-way, cellularized telecommunications systems on MDS and ITFS spectrum, CelPlan decided to bring the expertise it had developed in connection with other similar services to bear. Leveraging leading-edge software CelPlan had already developed for use in the engineering of other two-way, cellular services, CelPlan authored a suite of powerful software tools designed to assist broadband system developers in utilizing the MDS and ITFS spectrum. CelPlan commenced its efforts in September 1999, and released its first test version on January 4, 2000. Those tools provide market analyses, cell location analysis, spectrum allocation and frequency planning, and interference analysis. Of most importance for purposes of this proceeding is CelFCC™, which is designed to provide users with the ability to analyze potential interference from upstream response stations to downstream stations entitled to interference protection.¹ CelFCC™ is being used by the leading consulting engineers involved in MDS/ITFS-based broadband

¹ A more detailed description of the CelPlan software applicable to the MDS/ITFS industry is attached as Exhibit A.

services, including CelPlan's own consulting engineers,² Wireless Facilities, Inc. ("WFI"), Metapath Software International, Inc. ("MSI"), LCC International, Inc. and Hardin & Associates, Inc., as well as by Sprint Corporation ("Sprint"), WorldCom, Inc. ("WorldCom"), and others.

II. DISCUSSION

CelPlan will devote its comments to refuting the implication that even those who have proceeded with due diligence since the 1998 release of the Two-Way Order are somehow being prevented from filing applications by July 10th due to CelPlan. CelPlan's position, simply stated, is that while those who have been "asleep at the switch" until recently may find it difficult to submit applications by July 10th, those who have acted with appropriate dispatch can file accurate and complete applications using CelFCC™. Indeed, CelPlan's consulting engineers expect that dozens of applications they are preparing using CelFCC™ will be filed during the July 3-10 window.

A. CELFCC™ PERFORMS INTERFERENCE ANALYSES THAT FULLY COMPLY WITH THE METHODOLOGY AND PERMITS THE FILING OF ACCURATE AND COMPLETE APPLICATIONS.

First and foremost, the Commission should recognize that CelFCC™ performs interference analyses that fully comply with the interference protection rules adopted in MM Docket No. 97-217 and the most recent version of "Methods For Predicting Interference From Response Station Transmitters And To Response Station Hubs And For Supplying Data On Response Station Systems. MM Docket 97-217" (the

² In addition to providing software, CelPlan began actively marketing its consulting engineering services to the MDS/ITFS industry. CelPlan's engineers have already designed numerous systems for Sprint

“Methodology”), which was released by the Commission on April 27, 2000.³ The claim that “[s]ignificant flaws remain in [CeIFCC™] that will make filing in time for the current initial filing window virtually impossible”⁴ is not borne out by the facts. For example, it is said that CeIFCC™ is incapable of incorporating data from any other application, even one prepared using CeIFCC™. That is not true. While CeIFCC™ cannot yet import an EDX project file, CeIFCC™ can readily import any project file prepared using CeIFCC™. But, one must ask, “so what?” Even if neither program could import a project file, that in no way impacts the ability of the program to generate interference analyses that comport with the Methodology. Interoperability between software is a laudable goal. However, the lack of such interoperability – which was not mandated by the Commission – is hardly a reason to delay to launch of MDS/ITFS-based broadband services to the public.

Similarly, the observation that neither CeIFCC™ nor EDX is yet capable of accepting data from a diskette or CD-ROM hardly means that current users cannot file proper applications with the Commission during the July 3-10 filing window. While it is true that CeIFCC™ cannot yet import files from diskette or CD-ROM, the upgrade to

Corporation and do not envision encountering any difficulty in meeting the needs of CelPlan’s clients by the July 3-10 filing window.

³Indeed, within less than three weeks of the release of the latest version of the Methodology, CelPlan had released a version of CeIFCC™ that performed correct interference analyses in most cases, and by the June 2nd upgrade, CeIFCC™ was performing all interference analyses flawlessly. What this means is that most interferences analyses run after May 18th demonstrate interference protection in full compliance with the Methodology. In some isolated cases, analyses conducted between May 18th and June 2nd required re-running after the June 2nd release. However, the Commission should note that the post-June 2nd re-running of an interference analysis that was performed under the May 18th release takes only a minimal amount of engineer time, and far less computer time than designing a new system from scratch.

⁴ 2020 Petition, at 7.

permit such importing is a trivial task that CelPlan has postponed in order to give priority to the addition of other features requested more often by CelPlan's customers. It is, and always has been, CelPlan's intention to upgrade CelFCC™ to permit the import of data from a diskette or CD-ROM, and we will have such an upgrade in the hands of our licensees prior to the close of the July 3-10 filing window. Thus, those CelFCC™ users served during the window with ASCII files prepared in accordance with Paragraphs 74-111 of the Methodology will be able to import them automatically for purposes of conducting analyses. Even today, users of CelFCC™ can readily analyze the impact of proposed upstream facilities on existing downstream facilities either by importing a CelFCC™ project file or manually importing the relevant data from EDX or other software. Again, however, whether CelFCC™ can at present import data in no way affects the ability of the software to generate the interference studies necessary to prepare an application for filing by July 10th.

The final cited "flaw" revolves around its contention that CelFCC™ is not yet capable of addressing the so-called "limited exception" to the interference protection rules that is discussed in Paragraphs 69 through 71 of the Two-Way Reconsideration Order. From the time the "limited exception" was first adopted when the Commission expanded the radius of the circular protected service area from 15 to 35 miles, the exception has evolved. Thus, comparisons among various Commission documents issued at various stages of that evolution will inevitably reflect differences. That does not mean, however, that the current policy is not clear. To the contrary, in Paragraphs 69 through 71 of the Two-Way Reconsideration Order the Commission has stated with crystalline clarity that the limited exception to the 45 dB cochannel and 0 dB adjacent

channel D/U ratio requirement applies whenever an applicant can demonstrate that it currently causes interference at a particular location and that its proposed facilities will not either increase the level of interference (as measured by the D/U ratio) at that point or cause new interference at any other point. Therefore, pursuant to the procedures set forth in Paragraphs 36 through 39 of the Methodology, CelFCC™ establishes a grid of study points within the protected service area of the station to be studied and calculates the desired signal strength, the current undesired signal strength and the proposed undesired signal strength at each point on the grid.⁵ That data is then exported in a text file to a simple spreadsheet for a determination as to whether, if the applicable 45 dB cochannel or 0 dB adjacent channel benchmark is not met at any given study point, the limited exception applies because the predicted D/U ratio is equal to or greater than the existing D/U ratio.

The Commission should recognize that just because the results from CelFCC™ and EDX do not agree does not necessarily mean, as has been implied, that CelFCC™ is yielding incorrect results. Perhaps the unnamed individual performing the analysis erred in running one or both of the programs, or perhaps he or she failed to set up the two studies using identical parameters. Indeed, even if both programs were used flawlessly, the unspecified differences may simply reflect the fact that different software

⁵ While at one time the Commission essentially excluded from an incumbent's protected service area any area where the D/U ratio was below 45 dB, the Commission subsequently recognized that where existing levels of interference are relatively low, the "victim" licensee can often make adjustments (such as using superior equipment) that will permit it to continue to serve that portion of its protected service area. Thus, the Commission altered the limited exception so that the licensee making modifications could not increase the level of any existing interference. As a result, as discussed above the test to be applied now does not require the calculation of a 45 dB contour, but rather requires the calculation of existing and

implementations of the new rules and the Methodology can yield somewhat different results. Although the Methodology provides far greater specificity as to how interference analyses are to be conducted than the Commission has ever provided MDS and ITFS applicants before, it does not dictate all of the variables that go into the performance of interference studies. Because different software implementations of the Methodology will inevitably take different approaches to issues such as unit conversions, precision, bounding, the truncation of decimals, the use of polygons in approximating curved figures and sampling rates, it is inevitable that results from CelFCC™ and EDX will vary in insignificant ways. As is made clear by Paragraph 56 of the Two-Way Order, the question is not whether the results from CelFCC™ are identical to those of other programs, but whether the use of CelFCC™ reflects good engineering practice. Significantly, neither 2020 nor AFCCE has presented any evidence that the current version of CelFCC™ yields inaccurate interference analyses.

That is not surprising, for CelPlan is highly confident that CelFCC™ performs interference analyses in full accordance with the Methodology. CelPlan has devoted tens of thousands of man-hours (and far more computer time) to assure that CelFCC™, like all CelPlan software, performs in accordance with applicable requirements. Moreover, alpha and beta versions were extensively tested by Sprint Corporation and MCI Worldcom for months prior to the April 15, 2000 commercial release of CelFCC™, and today there are sixteen companies (representing approximately 150 licenses) employing CelFCC™. CelPlan has trained over one hundred users of CelFCC™, and

predicted interference levels at each study point so that the effect of the proposal on the D/U ratio be

those users have trained many more. Since CelPlan's last major update on June 2nd, CelPlan has received no evidence from its growing user community that CelFCC™ is generating inaccurate interference analyses. Indeed, at an audio conference sponsored by the National ITFS Association last week in which CelPlan participated, not one of the proponents of a delay in the window contended that CelFCC™ yielded erroneous results.

B. THERE HAS BEEN AMPLE OPPORTUNITY FOR THOSE WHO ACTED WITH DUE DILIGENCE TO SUBMIT APPLICATIONS BY JULY 10, AND HUNDREDS OF APPLICATIONS ARE BEING PREPARED FOR FILING.

Rather, the primary concern expressed during that audio conference was that engineers from small firms lack sufficient time between now and July 10th to become familiar with CelFCC™ and perform interference analyses. To the extent that that argument is at all relevant, the Commission should note that the training required to become proficient with CelFCC™ has been exaggerated. For example, it is claimed that "CelPlan recommends up to 30 days of training in order to fully utilize the tool's capabilities."⁶ That is not the case. In fact, as recognized by AFCCE, CelPlan recommends an initial training of 2-3 days, to be supplemented with a 2 day "refresher" course approximately 2-3 weeks later.⁷ And, while much has been made about the upgrades that CelPlan has released to CelFCC™, those upgrades have not been of a nature that any significant retraining has been necessary. Thus, an engineer who acted

determined at any point where interference already exists.

⁶ Hidle Declaration, ¶ 6.

⁷ AFCCE Petition, at 3.

diligently and was trained when CelFCC™ was released commercially in April should have been proficient with CelFCC™ long ago.

III. CONCLUSION

In conclusion, it is just plain wrong when it contends that “the current state of . . . software makes timely filing impossible, except for MDS licenses that intend to propose two-way systems of very limited capacity and sophistication.”⁸ To the contrary, CelPlan has provided the MDS/ITFS community with a powerful software tool capable of providing interference analyses in full compliance with the Methodology. Using that tool, CelPlan’s consulting engineers and others are preparing hundreds of MDS and ITFS applications for filing in the July 3-10 window.

Respectfully submitted,

CELPLAN WIRELESS GLOBAL TECHNOLOGIES, INC.

By: /s/ Leonhard Korowajczuk
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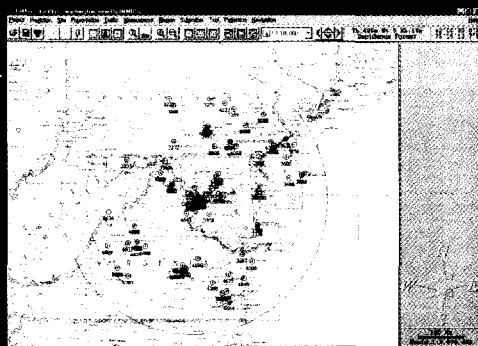
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⁸ 2020 Petition, at 8.

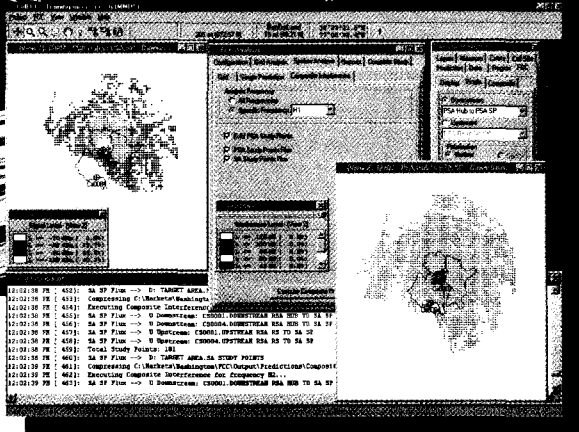
EXHIBIT 1

CelPlan™ ...

*the only tool that addresses
all the issues of a modern
Wireless Broadband
Communication System*



- Voice + Data
- Internet
- MMDS / ITFS
- Broadband
- FCC Licensing



ITFS and MMDS markets

The new FCC ruling requires collaboration between ITFS and MMDS operators. MMDS operators need to design advanced wireless system to compete and excel with wired solutions. ITFS operators have to protect and enhanced their educational capabilities. This requires that both sides use advanced methods to design and evaluate their networks.

New techniques and solutions are required to better use the spectrum and provide the sophisticated services required by today's Internet and communications savvy users. Traditional system design solutions are not capable of coping with the issues brought by this challenge.

CelPlan Technologies has foreseen this scenario and has developed a suite of powerful tools to address every aspect of the design of advanced Wireless Broadband and Educational systems.

Market Analysis

Starting with the market analysis the tool allows the manipulation of demographic data (residential and business) to provide the geographical distribution of the target areas in your market.

The user demand can then be assigned for voice and data, including its integration. The traffic requirements can then be expressed in Mbps. Associating user demand and demographic information a precise geographic traffic distribution is obtained.

Site Location

The best site locations can be easily obtained for coverage and traffic optimization. Available locations can be used according to user-defined priorities.

Radio and Channel Allocation

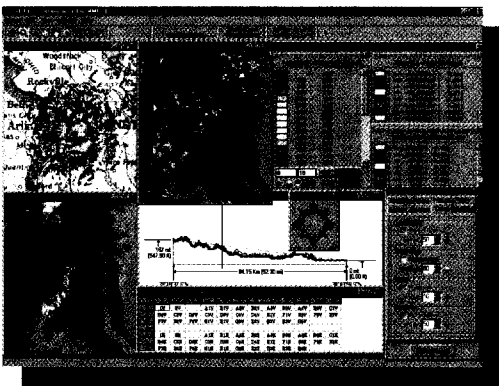
Broadband technologies are evolving rapidly and the user can face difficult choices. CelPlan supports many different radio types (user customizable) and provide information about its performance in the system. The tool supports different radios for downstream and upstream operations required due to the asymmetric characteristic of data links. The tool automatically calculates the number of radios required in each sector for optimal performance.

over →

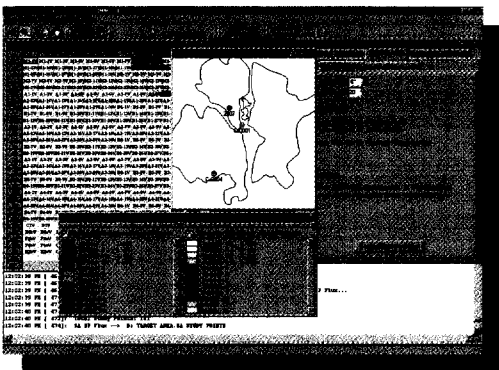
*CelPlan is the most powerful tool in the market
for the design of Wireless Broadband systems*



Frequency Planning



polarities for example. This procedure optimizes the solution and results in large savings to the operator, besides providing better quality systems. **CelOptima™** is capable of allocating these resources considering different bandwidths for the downstream and the upstream.



At CelPlan we call it Automatic Resource Allocation as we do not stop at the frequency allocation only but consider also other resources that have to be allocated, like

In situations like MMDS where many incumbents share the same spectrum as the new operators, this frequency planning is essential and can represent the difference

between: productive and peaceful collaboration or a myriad of future operational problems.

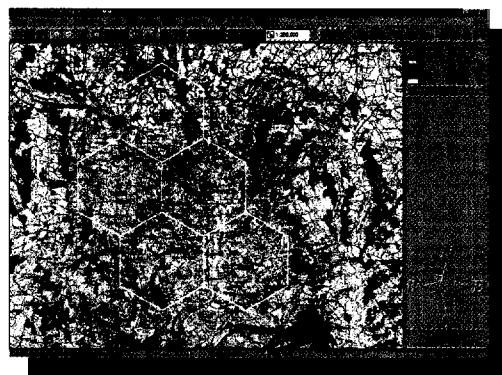
Our proprietary OPTIMA algorithm provides automatically the best solution considering in its planning the geographical traffic distribution to further optimize the resources allocation.

Interference Analysis

To optimize spectrum usage plans with variable reuse is a very difficult task. Until now there were no methods to effectively evaluate the performance of these systems. CelPlan has again presented a novel solution through **CelScore™**. This unique and powerful algorithm provides to the designer a geographical distribution of the percentage of calls that satisfy specified quality thresholds. It also provides a unique score for the whole system and grades it in relation to other systems.

Response Station Interference Analysis (MMDS and ITFS)

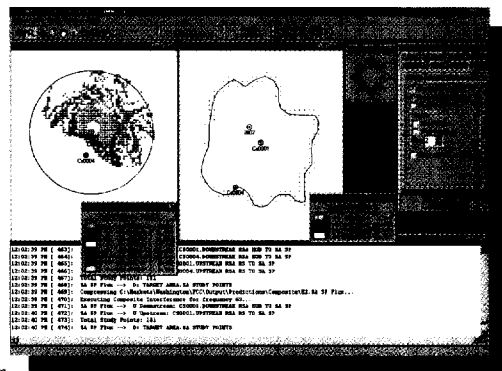
In situations where the same spectrum has to be used simultaneously by incumbent that use only downstream transmission (over the whole spectrum) and new operators that transmit downstream



and upstream many interference possibilities arise. The FCC has foreseen this problem and has issued very stringed regulations to minimize the possibility of conflicts. CelPlan has stepped forward and created **CelFCC™** to provide operators with a tool that can fully and easily implement all the analysis required in the FCC documents (Appendix D). This tool provides a one-button solution for the generation of the information required for MMDS and ITFS system filings consistent with FCC requirements.

Licensing

CelPlan has developed very flexible licensing terms that make the tool available for large corporations and at the same affordable for small operators that want to protect their operations. Many training options are available to support our users.



Consulting and services

Plan experts are available to provide your company with services to design the expansion of your system and to provide consulting services to review consent applications.

CelPlan is affordable for any size operation



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